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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DEAN FOOTE, CLAYTON DELBRIDGE, and
SCOTT DELBRIDGE

Appeal 2008-3472
Application 10/692,326
Technology Center 3600

Decided: October 31, 2008

Before: MURRIEL E. CRAWFORD, HUBERT C. LORIN and
BIBHU R. MOHANTY, *Administrative Patent Judges*.

CRAWFORD, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

Appellants appeal under 35 U.S.C. § 134 (2002) from a final rejection of claims 1, 3, and 4. We have jurisdiction under 35 U.S.C. § 6(b) (2002).

Appellants invented a seal assembly for a reciprocating shaft including first and second circumferential seal clusters (Specification 1:30 through 2:13).

The only independent claim under appeal reads as follows:

> 1. A seal assembly for a reciprocating shaft, comprising:
>
> a body having a bore;
>
> a shaft having a first end and a second end, the shaft being adapted to move reciprocally within the body between an extended position extending from the body and a retracted position retracted within the body;
>
> at least one first circumferential seal positioned in the body and circumscribing the first end of the shaft, the first circumferential seal performing a dedicated sealing function of preventing fluids from migrating along the shaft from a first region of the body, the shaft having a first seal travel area which is in contact with the first seal during axial reciprocating movement of the shaft, at least a portion of the first seal travel area extending from the body where it is exposed to contaminants when the shaft is in the extended position;
>
> at least one second circumferential seal positioned in the body and circumscribing the first end of the shaft in axially spaced relation to the first circumferential seal, the second circumferential seal being dedicated to performing the same sealing function as the first circumferential seal and serving as a redundant back up seal until the first circumferential seal experiences seal failure, the second circumferential seal being positioned to prevent fluids from migrating along the shaft from the first region of the body and to maintain the seal at the first end of the shaft in the event of a failure of the first circumferential seal, the shaft having a second seal travel area which is in contact with the second seal during axial reciprocating movement of the shaft, the second seal area remaining sheltered within the body even when the shaft is in the extended position; and

> the first seal travel area and the second seal travel area being axially spaced separate and distinct areas on the shaft, such that damage to the exposed portion of the first seal travel area leading to a failure of the at least one first circumferential seal does not lead to failure of the at least one second circumferential seal, as the second circumferential seal engages the second seal travel area which is separate and distinct from the first seal travel area.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Rasmussen	US 1,709,949	Apr. 23, 1929
Thompson	US 3,987,846	Oct. 26, 1976
Peil	US 4,877,217	Oct. 31, 1989

The Examiner rejected claims 1 and 4 under 35 U.S.C. § 102(b) as being anticipated by Peil.

The Examiner rejected claim 1 under 35 U.S.C. § 102(b) as being anticipated by Rasmussen.

The Examiner rejected claim 3 under 35 U.S.C. § 103(a) as being unpatentable over Peil in view of Thompson.

We AFFIRM.

ISSUE

The first issue is whether the Appellants have shown that the Examiner erred in finding that seals 30, 32 of Peil both perform the same sealing function and serve as redundant back up seals to the other.

The second issue is whether the Appellants have shown that the Examiner erred in finding that ram shaft 26 of Peil is a reciprocating shaft

with at least a portion of the first seal travel area extending from the body where it is exposed to contaminants when the shaft is in the extended position.

The third issue is whether the Appellants have shown that the Examiner erred in finding that packers 85, 115 of Rasmussen anticipate the first and second circumferential seals of claim 1. The issue here turns on a construction of "dedicated."

The fourth issue is whether the Appellants have shown that the Examiner erred in finding that Rasmussen discloses a reciprocating shaft. The issue here turns on a construction of "reciprocate."

FINDINGS OF FACT

The Appellants invented a sealing assembly including a ram shaft which, during normal operation, is pulled back and forth past circumferential seals which seal around the ram shaft (Specification 1:17-19).

Peil describes a fail-safe mechanism including a housing 20 mounted to a preventer body 10 (col. 2, ll. 24-26).

A ram shaft 26 extends through a bore 22 of housing 20, and a first seal 30 and a second seal 32 are positioned between ram shaft 26 and bore 22 to prevent flow or leaks of the well fluid from a ram bore 14 of preventer body 10 or of a hydraulic fluid from chamber 24 of housing 20 (col. 2, ll. 29-37).

In the closed position, ram shaft 26 is extended from housing 20 and exposed to well fluid in area 45 of ram bore 14 (col. 2, l. 66 through col. 3, l. 2; Fig. 3).

Rasmussen describes a blowout preventer which will retain the gas in a well during the insertion of a drill stem or a string of casing and when drawing the stem or string from the well (p. 1, ll. 16-20).

Blowout preventer 20 includes a tubular body 21 having an auxiliary packer section 30, a lower packer section 31 and an upper packer section 33 including an auxiliary packer 55, a packer 85 and an upper packer 118, respectively (p. 1, l. 91 through p. 3, l. 4).

When gas is present in the well, packer 118 and the upper portion of packer 85 are expanded into tight packing engagement with a casing 260 (p. 4, ll. 76-115).

The Specification does not define the claim terms "dedicated" and "reciprocate."

The ordinary and customary meaning of the word "dedicated" is "given over to a particular purpose." See Merriam-Webster's Collegiate Dictionary 324 (11th ed. 2007).

The ordinary and customary meaning of the word "reciprocate" is "to move forward and backward alternately." See Merriam-Webster's Collegiate Dictionary 1039 (11th ed. 2007).

PRINCIPLES OF LAW

Claim Construction

During examination of a patent application, a pending claim is given the broadest reasonable construction consistent with the specification and should be read in light of the specification as it would be interpreted by one of ordinary skill in the art. *In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359,

1369 (Fed. Cir. 2004). "[T]he words of a claim 'are generally given their ordinary and customary meaning.'" *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (internal citations omitted).

Anticipation

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros., Inc. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987).

ANALYSIS

The rejection of claims 1 and 4 under 35 U.S.C. § 102(b) as being anticipated by Peil.

The Appellants argued claims 1 and 4 as a group (Appeal Brief 8). We select claim 1 as the representative claim for this group, and the remaining claim 4 stands or falls with claim 1. 37 C.F.R. § 41.37(c)(1)(vii) (2007).

The first issue is whether seals 30, 32 of Peil perform different sealing functions because (1) each of seals 30, 32 is structurally configured to perform different active sealing functions against different fluids in different directions and (2) when one of seals 30, 32 fails, well fluids flow out of a leak indicator port 34 instead of flowing to the other seal 30, 32 (Appeal Brief 8-9; Reply Brief 4-5). We do not find either argument persuasive.

Peil discloses that "[a] first seal 30 and a second seal 32… prevent flow or leaks of the well fluid from the ram bore 14 or of hydraulic fluid from the chamber 24" (col. 2, ll. 33-37). The most logical reading of the aforementioned portion of Peil is that by discussing the functions of both seals 30, 32 simultaneously, Peil discloses that seals 30, 32 perform the same

sealing function. And since seals 30, 32 perform the same sealing function, it follows that one would serve as a backup for the other for that same sealing function should a failure occur.

Even assuming that each of seals 30, 32 performs a different function against different fluids in different directions, the first argument is still not persuasive because it is well established that while the features of an apparatus claim may be recited functionally, the apparatus must be distinguished from the prior art in terms of structure, rather than function. *See In re Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997). Regardless of what actual functions seals 30, 32 serve in Peil, no evidence has been provided that seals 30, 32 are structurally different such that they cannot perform the same function.

It is also well settled that when a claimed product reasonably appears to be substantially the same as a product disclosed by the prior art, the burden is on the applicant to prove that the prior art product is not necessarily or inherently capable of performing the claimed function. *See Schreiber* at 1478; *see also In re Spada*, 911 F.2d 705, 708 (Fed. Cir. 1990); *In re Best*, 562 F.2d 1252, 1255 (CCPA 1977). Other than asserting that seals 30, 32 may serve different functions, Appellants have not shown why seals 30, 32 are not *capable* of performing each other's functions.

We also are not persuaded by Appellant's second argument. Regardless of whether or not fluid flows exclusively through leak indicator port 34, such fluid flow does not alter the structure of seals 30, 32 such that they would be incapable of performing the same function.

Moreover, we disagree with the characterization that when there is a defective seal 30, 32, well fluids will flow out of a leak indicator port 34 *instead* of flowing to the other seal 30, 32. Peil merely discloses that if either of seals 30, 32 becomes defective and fluid flows into annular chamber 35, *some* of that fluid will flow through leak indicator port 34 to an exterior of housing 20 to provide a visual indication of the defective seal 30, 32 (col. 2, ll. 37-42). Nothing in Peil indicates that *all* of the leaked fluid would flow *exclusively* through leak indicator port 34 and not continue on to non-defective seal 30, 32. Accordingly, when some of the leaked fluid flows to non-defective seal 30, 32, nothing in Peil indicates that non-defective seal 30, 32 would fail to perform the proper sealing function.

Concerning Appellants' argument on the second issue that ram shaft 26 does not extend from preventer body 10 (Appeal Brief 9), we note that during prosecution, the claims are given their "broadest reasonable interpretation." *In re Bigio*, 381 F.3d 1320, 1324 (Fed. Cir. 2004) (quoting *In re Hyatt*, 211 F.3d 1367, 1372 (Fed. Cir. 2000)). While Appellant is correct that ram shaft 26 does not extend from preventer body 10, the Examiner refers to ram shaft 26 extending from a housing (Examiner's Answer 6). As Peil does disclose housing 20 which is a separate structure attached to preventer body 10, and ram shaft 26 extends from housing 20 and is exposed to well fluid in area 45 of ram bore 14 (col. 2, l. 66 through col. 3, l. 2; Fig. 3), it is our opinion that ram shaft 26 is a "reciprocating shaft" with "at least a portion of the first seal travel area extending from the body where it is exposed to contaminants when the shaft is in the extended position" as broadly recited in claim 1.

Accordingly, we sustain the rejection of claim 1 as being anticipated by Peil. Since claim 4 stands or falls with claim 1, we sustain the rejection of claim 4 as well.

The rejection of claim 1 under 35 U.S.C. § 102(b) as being anticipated by Rasmussen.

We are not persuaded that packers 85, 115 do not perform a dedicated sealing function because they only come into contact with casing 260 when gas is present in the well (Appeal Brief 11). The term "dedicated" was added in an Amendment filed November 20, 2006 and is not set forth in the Specification. Given the absence of a definition in the Specification for the claim term "dedicated," we will apply its ordinary and customary meaning. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005). The ordinary and customary meaning for "dedicated" is "given over to a particular purpose," which, in this case, would be a sealing function. Rasmussen does not disclose packers 85, 115 as having a purpose other than a sealing function. While packers 85, 115 may not always be in sealing contact with casing 260 (Appeal Brief 11), those aspects are not set forth in the claim, and thus are immaterial as distinctions over the prior art. *See In re Self*, 671 F.2d 1344, 1348 (CCPA 1982).

We are also not persuaded that Rasmussen does not disclose a reciprocating shaft. Given the absence of an explicit definition in the Specification for the claim term "reciprocate," we will apply its ordinary and customary meaning. The ordinary and customary meaning of "reciprocate" is "to move forward and backward alternately." This meaning is supported by the Specification at 1:17-19, which recites "[d]uring normal operation the

ram shaft is pulled back and forth past circumferential seal which seal around the ram shaft."

Rasmussen discloses "the insertion of a drill stem or a string of casing into or drawing these from the well" (p. 1, ll. 16-20). Accordingly, Rasmussen does disclose the drill stem and string of casing performing a reciprocating motion when they are inserted into and drawn out of the well. While we agree that the vast majority of the time the drill stem and string of casing will be either inserted into or drawn out of the well, neither the express language of the claim nor the aforementioned construction of "reciprocate" places any temporal limits on these actions. As we cannot read extraneous limitations into the claims (*see In re Self* at 1348) and claim terms are to be given their broadest reasonable interpretation (*see In re Bigio* at 1324), we also decline to place such temporal limits on "reciprocate."

We are also mindful that in the typical implementation of Rasmussen, casing 260 would not have a first seal travel area and a second seal travel area as disclosed in the claims (Appeal Brief 10-11). However, similar to the discussion set forth above with respect to seals 30, 32 of Peil, because the seal travel areas are described in functional terms, the test is whether casing 260 is *structurally capable* of having different seal travel areas. *See Schreiber* at 1478. We agree with the Examiner that because casing 260 is *capable* of being moved the limited distances so as to have the claimed seal travel areas (Examiner's Answer 11), and no argument has been set forth why casing 260 is structurally incapable of being moved in such a manner, that Rasmussen does disclose first and second seal travel areas.

Accordingly, we sustain the rejection of claim 1 as being anticipated by Rasmussen.

The rejection of claim 3 under 35 U.S.C. § 103(a) as being unpatentable over Peil in view of Thompson.

The Appellants have not made any substantive rebuttal to the rejection of claim 3 under 35 U.S.C. § 103(a) over Peil in view of Thompson other than to rely on arguments they made in challenging the rejections of claim 1. Since we have not found them persuasive as to error in those rejections, we find them equally unpersuasive as to error in the rejection of claim 3. The rejection is affirmed.

CONCLUSION OF LAW

We conclude that the Appellants have not shown that the Examiner erred in rejecting claims 1 and 4 under 35 U.S.C. § 102(b) as being anticipated by Peil; claim 1 under 35 U.S.C. § 102(b) as being anticipated by Rasmussen; and, claim 3 under 35 U.S.C. § 103(a) as being unpatentable over Peil in view of Thompson.

DECISION

The decision of the Examiner to reject claims 1, 3, and 4 is affirmed.

AFFIRMED

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